# Project Summary

The Landrie Lake Water Utility (LLWU) is proposing to reinstate the Little River Transfer Pumphouse and water transmission pipeline, referred to as the Little River Pumping and Transmission System Project (the Project). The Project is intended to transfer water from the Little River Reservoir to Landrie Lake and enhance water yield potentially required for future industrial growth in the Point Tupper area, Cape Breton, Nova Scotia. The Project will reinstate existing site access, construct an intake structure, pumphouse, pumping and piping systems, controls, and a 2.75 km buried 900 mm diameter high-density polyethylene water transmission pipeline largely along the existing right-of-way. Construction will include activities such as vegetation clearing and grubbing, upgrades to the site access road, trenching, pipeline installation, backfilling and compaction, right-of-way vegetation restoration, demolition of existing pumping station, intake installation, building construction, and equipment installation. Work could start on the Project within one year of approval and construction is estimated to take approximately 16 months with an operational life of 50 to 100 years.

The location of the Project is shown on Figure 1.

The Little River Reservoir transfer will be operated to maintain a safe yield or net positive annual water balance. The transfer will operate under a new water withdrawal approval, to be obtained following Environmental Assessment Approval.

## Benefits

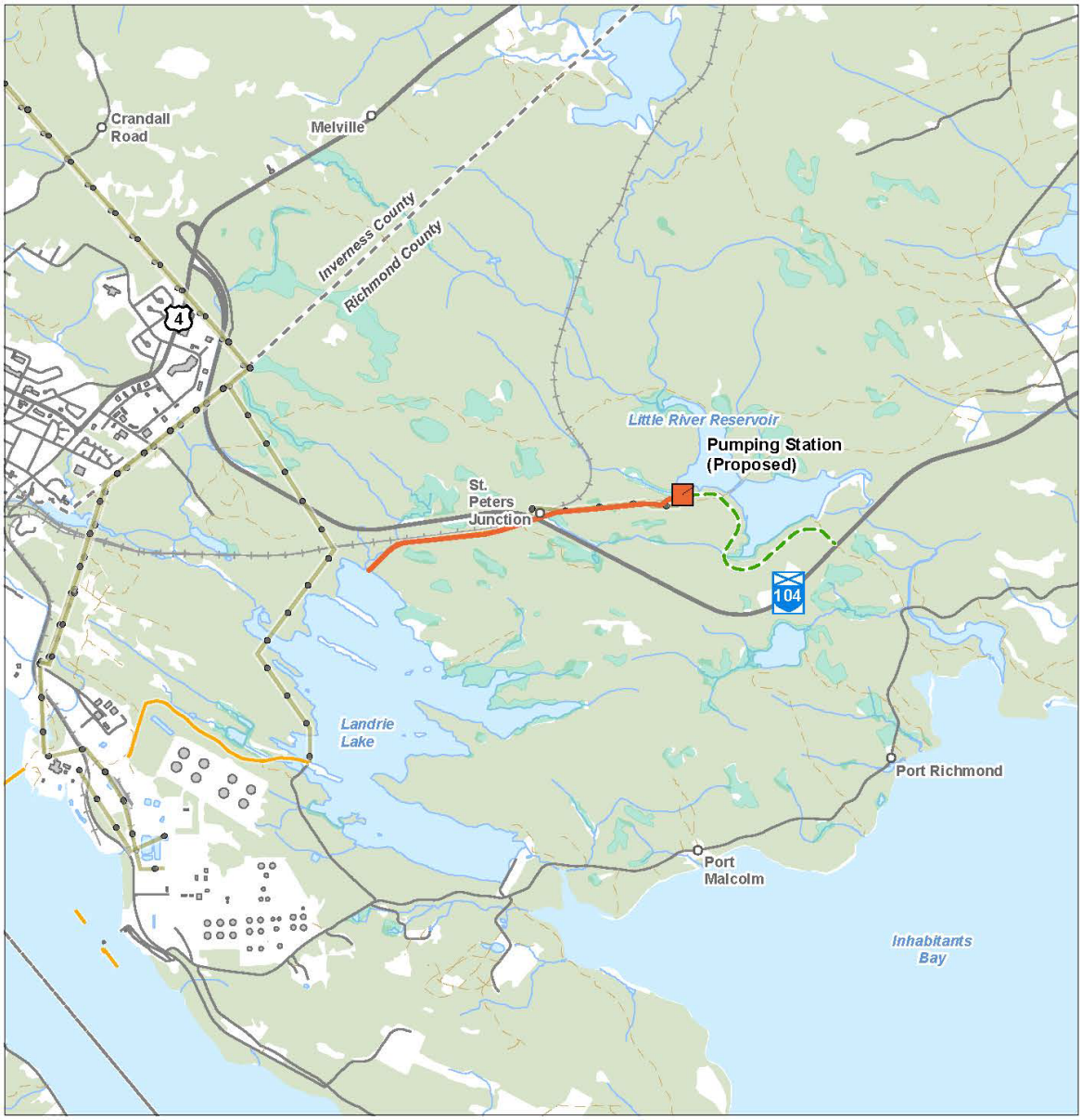
The reinstatement of the Little River pumping and transmission system will increase access to raw water from Landrie Lake to support regional industrial development and associated benefits.

## Regulatory Framework

The Project is subject to the requirements associated with a Class I registration under the Nova Scotia Environmental Assessment Regulations because the Project involves transferring water between drainage basins, and the drainage area containing the water to be diverted is larger than 1 $km^2$. Other key permits include a provincial Surface Water Withdrawal Approval (SWWA) as well as other provincial approvals related to disturbance of watercourses and wetlands. An authorization under the federal *Fisheries Act* may also be required if fish habitat is adversely affected.

# Engagement and Consultation

A stakeholder and Mi'kmaq engagement plan was developed to identify stakeholders and Mi'kmaq communities who may have an interest in or potentially be impacted by the proposed Project. The plan also outlined the methods of engagement to be used to provide Project information and opportunities to ask questions and discuss areas of interest and concerns. Issues raised during engagement and consultation were addressed in the assessment.

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# Environmental Effects and Mitigation

## Air Quality, Dust and Noise

Effects: Project construction activities could produce dust and emissions from trucks and equipment. Machinery will produce noise during construction and operation.

Mitigation: Equipment will be kept in good condition to reduce emissions. Dust will be controlled by watering roads. Pumps will operate within an enclosed building.

## Water Resources

Effects: The Project will interact with Water Resources resulting in a change in surface water quantity and change in surface water quality as a result of the following activities:

- Water withdrawal during operations of the Project, if not managed, can alter fish habitat through changes in lake water levels or reductions in downstream flow.
- Project activities may alter surface water quality through a change in suspended solids in Little River during construction, or potential changes in water quality within an existing public water supply.

Mitigation:

The following are a selection of key mitigation measures to reduce adverse effects on Water Resources:

- Water quality of the source of supply at Landrie Lake and Little River will be routinely monitored.
- A SWWA will be secured from NSECC prior to operations of the Little River Reservoir withdrawal. Withdrawal of water from Little River Reservoir will occur under the conditions of the site-specific SWWA.
- A drought contingency plan will be developed an implemented to enact water saving measures and phased demand reductions based on thresholds associated with lake water levels, with priority supply maintained to municipal water users.
- An Ecological Maintenance Flow (EMF) (continuous flow to the downstream environment to sustain the ecosystem) threshold for Little River, will be decided through a letter of advice, *Fisheries Act* authorizations, or in consultation with the federal Department of Fisheries and Oceans (DFO).
- EMF will be maintained when hydrological conditions allow.
- The Little River Reservoir outlet will be modified to support the provision of EMF to the downstream environment. EMF supply is contingent on inflow rates, which may naturally drop below the EMF threshold.
- A NS Watercourse Alteration Approval will be obtained for work within watercourses and the construction of the intake in Little River Reservoir and the outfall into Landrie Lake.
- A site-specific Erosion and Sediment Control Plan will be developed for areas of vegetation clearing and trenching near lakes and streams prior to construction.

## Fish and Fish Habitat

Effects: Erosion and sedimentation and change in water levels during construction and operation of the facility could affect fish and/or fish habitat.

Mitigation: Mitigation measures employed to reduce adverse effects on Water Resources (above) will also reduce potential effects on fish and fish habitat. Unavoidable adverse effects on fish and fish habitat will require authorization from DFO under the *Fisheries Act* and possible offsetting measures so that there is no net loss of the productive capacity of the habitat for fish or death of fish.

## Vegetation and Wetlands

Effects: The pipeline construction will include vegetation clearing and wetlands within the Project area will be disturbed. Changes in water levels during operation could affect wetlands hydraulically connected to Little River Reservoir.

Mitigation: Wetland disturbances will be avoided, if possible, and a wetland alteration approval will be obtained for wetlands that will be disturbed during construction and operation of the pipeline including provision for habitat compensation.

## Wildlife and Habitat

Effects: The Project could alter and reduce wildlife habitat primarily through vegetation clearing and construction disturbance.

Mitigation: Clearing will be scheduled outside of bird and bat breeding seasons, when feasible. Project vehicles will adhere to posted speed limits to reduce the potential vehicle collisions with wildlife.

## Heritage Resources

Effects: The project could disturb archaeological and heritage resources, though none have been identified in the Project area.

Mitigation: A Heritage Resources Accidental Discovery Plan will be implemented in the unanticipated event that heritage resources are encountered.

## Potential Impacts and Benefits to the Mi'kmaq of Nova Scotia

Effects: A Mi'kmaq Ecological Knowledge Study (MEKS) was completed by Membertou Geomatic Solutions for the proposed Project. Traditional use activities were reported to occur in the vicinity of the PDA, including trout fishing and mushroom gathering, with mackerel and rabbit harvesting also favoured activities in the Study Area. A change in traditional use could potentially occur as a result of potential Project-related change to the terrestrial habitat and reduced access.

Mitigation: Mitigation measures to eliminate or reduce adverse effects on biophysical resources will also reduce adverse effects on Mi'kmaq land and resource use. Restricted access to the Project area will

primarily occur during the construction phase. Since the pipeline will be buried, no long-term effects are anticipated for hunting and gathering activities. LLWU will continue to engage with the Mi'kmaq of Nova Scotia to understand potential concerns and mitigate adverse effects.

### Climate Change

Effects: Based on an intermediate projection of the effects of future climate change, Landrie Lake watershed average annual temperature is projected to increase by 2.3 ºC to 8.5ºC for the 2021-2050 period. Projected warmer temperatures result in less snowfall, more rain, and increasingly intense rainfall events (NSECC 2022b).

Potential effects of climate change associated with extreme temperatures, heavy precipitation, winds, and storms could include delay and/or interruption of Project activities; loss of electrical power; and damage to site access, infrastructure, and equipment. Extreme precipitation and associated surface water runoff could potentially cause flooding, erosion, and washout of site features including roads. These effects in turn could affect surface water resources, fish and fish habitat and wetlands.

Mitigation: The Project will be designed to withstand instances of extreme weather. Weather forecasts will be monitored and prior to extreme weather events, appropriate preventative measures will be taken to reduce the risk of damage to the Project. This will include inspections prior to and following significant precipitation events

## Conclusion

The Little River Pumping and Transmission System Project will provide benefits to the community by supporting ongoing and future municipal water supply as well as ongoing and proposed future industrial development in the Point Tupper Area. Potentially adverse effects arising from Project development will be reduced or avoided through a variety of mitigation measures and management plans and compliance with environmental regulations, particularly the SWWA permitting process and associated monitoring. No significant adverse Project-related effects are anticipated assuming, proposed mitigation measures are followed. Engagement with local communities, regulatory agencies, and the Mi'kmaq of Nova Scotia will be ongoing throughout the Project to maintain good communication and address potential concerns.